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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/595,360 | 06/15/2000 | George L. Bees | FOM-119.01 | 9301 |

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| EXAMINER |
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INZIRILLO, GIOACCHINO

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| ART UNIT | PAPER NUMBER |
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2828

DATE MAILED: 04/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/595,360

Applicant(s)

BEES, GEORGE L.

Examiner

Gioacchino Inzirillo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

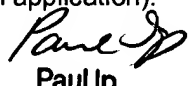
- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-19 is/are rejected.
- 7) ☒ Claim(s) 8 and 20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 June 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.


Paul Ip
Primary Examiner

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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DETAILED ACTION

Drawings

The drawings are objected to because the diode 36 of Fig. 1 is not shown connected to the circuit. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Page 9 line 10 lists the control module as 24. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1 – 7 and 16 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pacala US 4,698,518 (herein after known as Pacala) in view of Kawamura US 6,330,258 (herein after known as Kawamura).

Regarding claims 1, 2, 6 and 17 – 19, Pacala discloses a power supply system for a pulse discharge system in Fig. 1. Gas laser 10 is feed discharge energy by main capacitor 12 through inductor 14 (for storing energy), which is in turn feed by the power supply 26. Located between the Capacitor 12 and the power supply 26 is switching element 20, which is actuated by trigger generator 24. When the power supply has charged the capacitor 12 to a certain level, the switching element 20 triggers, and the keep up power supply 16 provides the rest of the necessary energy to the laser to produce a laser beam. Pacala fails to teach a sensor for monitoring voltage across the capacitor and a controller responsive to the voltage across the capacitor for controlling the switching element. However, Kawamura teaches a sensor and a controller responsive to the sensor. Fig. 1 of Kawamura shows a voltage sensor 44, which measures the voltage across the excitation lamp 22, which as all those of skill in the art would recognize, the shown discharge plates act like capacitors. The Voltage information is passed to the CPU 38, which also controls the switching element 34 through its drive circuit 36. Therefore, it would have been obvious to one of ordinary skill in the art to modify Pacala as taught by Kawamura to have a more reliable way of controlling the switching of the power sources.

Regarding claim 3, the Pacala capacitor and inductor must necessarily have a time constant less than the pulse rate, since the pulse rate is dependent on the time constant of the system. In other

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words, the larger the time constant, the larger the pulse rate will have to be since the time constant is a factor involved in determining the pulse rate.

Regarding claim 4, Pacala fail to teach a keep up power supply with an input module, memory, comparator and charging module, However, Kawamura teaches his own version of a keep up power supply in Fig. 2 wherein CPU 38 receives measurement of the voltage across the lamp 22, Fig. 1 shows memory 40, which stores programs and set values and computational data for the CPU to use, the CPU will perform any necessary comparisons of the voltages of otherwise, and the charging module will be power supply 54 of Fig. 2. Therefore, It would have been obvious to one of ordinary skill in the art to modify Pacala in view of Kawamura to have better control of the keep up power supply and the switching.

Regarding claim 5, although the Pacala in view of Kawamura fails to teach a voltage divider, Kawamura teaches a voltage detection circuit ^(74, 76). It would have been obvious to one of ordinary skill in the art to use substitute the voltage detection circuit of Kawamura with a voltage divider because the voltage divider is an equivalent means of detecting the voltage.

Regarding claims 9 – 16, since all of the claim limitations are present in Pacala in view of Kawamura, these method limitations are present of inherently able to be fulfilled.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pacala in view of Kawamura as applied to claims 1, 2 and 6 above, and further in view of Applicants admitted

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prior art. Although Pacala in view of Kawamura fail to teach Doppler radar using the discharge system, Applicant admits on page 1 lines 15 and 16 that Doppler radars systems are known to use discharge systems. Therefore, it would have been obvious to one of ordinary skill in the art to substitute an existing discharge system in a Doppler radar system with an improved one.

Claims 8 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not teach or fairly suggest a switching circuit with a power supply system for a pulse discharge system with an switch mechanism between a capacitor and a main power supply, a sensor for monitoring a voltage across the capacitor, and controller responsive to the voltage across the capacitor for controlling the switching mechanism, and a keep up power supply responsive to the voltage across the capacitor and to the controller and for delivering energy to the capacitor to maintain the voltage at a predetermined level, and where the switching mechanism includes a first switch in series between the main power supply and an inductor, a second switch in series between the inductor and the capacitor, and a third switch in parallel to the series combination of the first switch and the inductor.

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Prior Art


The following US patents are being made of record, even though they were not relied upon in this Office Action, for being similar in subject matter, and may be relied upon in any future

Office Actions: 5267253, 4573160, 5708676, 5105097

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gioacchino Inzirillo whose telephone number is 703-305-1967. The examiner can normally be reached on M-F 8:30AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on 703-308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7721 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Gioacchino Inzirillo
Examiner
Art Unit 2828
March 30, 2002


Paul Ip
Primary Examiner